



REVIEW ARTICLE

Treatment of rotator cuff tears in older individuals: a systematic review

Brian K. Downie, PA-C, MS, Bruce S. Miller, MD, MS*

Department of Orthopaedic Surgery, MedSport, University of Michigan, Ann Arbor, MI, USA

Background: Rotator cuff disease is common in older adults and may compromise health status and functional independence. However, little evidence exists to guide the treatment of rotator cuff tears (RCTs) in the older patient. This study evaluated the evidence regarding treatment of RCTs in patients with a mean age of 60 years or older.

Methods: PubMed, SCOPUS, Science Citation Index (Web of Knowledge), Sport Discus, CINAHL, The Cochrane Controlled Trials registry, podium and poster presentations, proceedings, and abstracts from American Academy of Orthopaedic Surgeons, American Orthopaedic Society for Sports Medicine, and American Shoulder and Elbow Surgeons were searched for published and unpublished studies from 1966 to 2009. Inclusion criteria were English language, level of evidence I to III or greater, a full-thickness RCT, and treatment (surgery, physical therapy, injections, medications, or observation). Exclusion criteria included purely retrospective studies, isolated tears of the subscapularis, partial RCTs, revision surgery, and grafting or tendon transfer procedures. The blinded studies were independently evaluated using principles in the CONSORT (Consolidated Standards of Reporting Trials, 2001) statement and then collated by level of evidence and treatment strategy.

Results: Eight studies (1 level I, 4 level II, and 3 level III) evaluated treatment outcomes in patients aged older than 60 years. Review of the included operative studies suggests possible efficacy with operative intervention. However, heterogeneity of these studies and bias did not allow for a valid consensus on the best treatment approach.

Conclusions: There is insufficient evidence to suggest efficacy in operative or nonoperative treatment of RCTs in older patients. The results presented here suggest possible favorable outcomes with operative management of RCTs.

Level of evidence: Level III, Systematic Review.

© 2012 Journal of Shoulder and Elbow Surgery Board of Trustees.

Keywords: Shoulder; rotator cuff; treatment; older patient

Rotator cuff disease is a common finding in older adults. That an age-related prevalence of rotator cuff tears exists is widely accepted.^{11,12,22} At least 30% of individuals aged

older than 60 will have a full-thickness rotator cuff tear (RCT).¹⁴ RCTs are a substantial cause of disability in adults and are associated with chronic pain, weakness, and dysfunction of the upper extremity. Patient-reported outcomes suggest that shoulder dysfunction is associated with a compromise in an individual's health status similar to that seen in major medical diseases such as congestive heart failure, acute myocardial infarction, diabetes mellitus, and clinical depression.⁵ Rotator cuff disease alone is

Investigational Review Board approval was not required for this review article.

*Reprint requests: Bruce S. Miller, MD, Assistant Professor, University of Michigan, Department of Orthopaedic Surgery, MedSport, 24 Frank Lloyd Wright Dr, Lobby A, Ann Arbor, MI 48106-5736, USA.

E-mail address: bsmiller@umich.edu (B.S. Miller).

a primary determinant of health status, and surgery for rotator cuff disease reliably and significantly improves general health status.^{15,16} In the working adult population, RCTs can result in the inability to work, and in the older population can contribute to significant impairment and the loss of functional independence.

Our understanding of the natural history of full-thickness RCTs is evolving. It is clear that the full-thickness RCT has little inherent capacity to heal without operative intervention. It is also accepted that the size of untreated RCT tear may increase over time, with subsequent tendon retraction and irreversible muscle atrophy.^{7,23} Treatment options for the symptomatic RCT include nonoperative and operative interventions. Many individuals with RCTs find symptomatic relief with physical therapy alone, whereas others ultimately require operative repair for resolution of pain and weakness. Operative repair of a traumatic RCT in a young active adult is a widely accepted treatment option; however, very little evidence exists to guide the physician in the treatment of an RCT in an older patient.

The purpose of this systematic review was to evaluate the evidence regarding treatment of RCTs in patients aged 60 years and older. We hypothesized that there would be evidence supporting the efficacy of operative as well as nonoperative treatment of RCTs in older patients.

Methods

A protocol was established, and a search of published and unpublished studies in English-language sources for the treatment of RCTs in individuals with a mean age of 60 years or more was conducted. Medline was searched via PubMed for articles from 1966 to 2009 using the search terms “shoulder,” “rotator cuff,” “treatment outcome,” and “aged.” This search strategy was repeated for the SCOPUS, Science Citation Index (Web of Knowledge), Sport Discus, and CINAHL databases. The Cochrane Controlled Trials registry was also searched using these terms. Finally, proceedings, podium presentations, poster presentations, and abstracts were reviewed from all available electronic sources offered by the American Academy of Orthopaedic Surgeons (AAOS), the American Orthopaedic Society for Sports Medicine (AOSSM), and the American Shoulder and Elbow Surgeons (ASES) as far back as were available online. Authors of unpublished works were contacted by e-mail and letter requesting additional information if their work was not identified in the published literature.

In searching the Cochrane Controlled Trials registry, SCOPUS, Science Citation Index (Web of Knowledge), Sport Discus and CINAHL, some modifications to the search terms were necessary to return search results. If no results were returned at the initial search, the last term in the search string was eliminated and the search was run again. This process was repeated until a result was returned.

Articles were identified for potential inclusion using the title and abstract. Initial search results were compiled and entered into Endnote X.0.2 (Thomson Reuters, New York, NY, USA) to exclude duplicate studies. If the abstracts did not provide sufficient information to independently evaluate articles for inclusion, the full article was scrutinized for study inclusion. Article labels

provided by the authors were not used to assign methodology or levels of evidence for this systematic review. As articles were selected, their bibliographies were also reviewed and cross-referenced. A final list was compiled, and we reviewed the complete articles for final inclusion and evaluation.

Manuscript inclusion criteria were as follows: studies reflecting level III evidence or greater (randomized controlled trial, prospective comparative studies, case-control study, retrospective comparative study) that included patients with a mean or median age of 60 years or older; a full-thickness RCT of the supraspinatus or infraspinatus tendon with the diagnosis confirmed by magnetic resonance imaging (MRI), ultrasound, surgery, or arthrography; and treatment of the tear by surgery, physical therapy, injections, medications, or no treatment (observation). The exclusion criteria included studies reporting a mean age of younger than 60 years (mean ages between 59 and 60 years were rounded up to be included), isolated tears of the subscapularis (combined tears of supraspinatus and subscapularis were included), partial RCTs, revision surgery, and grafting or tendon transfer procedures.

All articles included for quality evaluation were blinded and then evaluated using principles of evidence-based medicine as identified in the CONSORT (Consolidated Standards of Reporting Trials) statement with revised recommendations from 2001.¹⁷ Because evidence-based medicine relies on the highest level of available evidence, these principles were carried over to evaluate work with a lower level of evidence, as applicable. Disagreements regarding the level of evidence of these articles were discussed among the evaluators until a consensus was reached. We completed the data extraction and the studies were then collated by level of evidence and treatment strategy.

Results

Studies

Initially, 448 articles were identified for evaluation. Eight studies, including 1 level I, 4 level II, and 3 level III studies, met the inclusion criteria (Table I). The articles were collated according to level of evidence and type of treatment rendered. Seven studies evaluated outcomes after operative repair. Three studies evaluated rotator cuff integrity in addition to outcomes after operative repair. One study evaluated the efficacy of sodium hyaluronate vs corticosteroid injection for pain relief in the setting of full-thickness RCTs.

Demographics

Summary statement

Reported demographics were inconsistent between reviewed studies; however, males were more prevalent than females and tear sizes studied were generally larger than 2 cm with mean follow-up times less than 12 months on average.

The 8 studies reported a mean patient age ranging from 59.3 to 64 years. Age distribution was reported in 6 of the 8 studies,^{3,4,6,8,10,19,21} starting at age 28 years, but not exceeding 81 years. Five of the 8 studies^{2,4,10,19,21} reported

Download English Version:

<https://daneshyari.com/en/article/4074334>

Download Persian Version:

<https://daneshyari.com/article/4074334>

[Daneshyari.com](https://daneshyari.com)